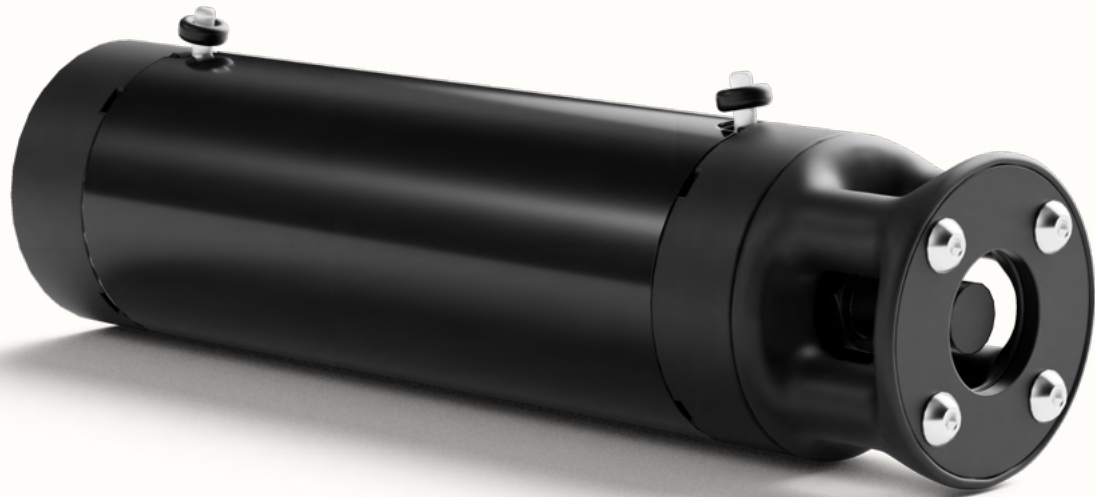


Hydrophone



Add a robust, AI-enabled hydrophone to your Spotter Platform to monitor and identify underwater sound in real time. Process data at the edge using built-in AI models or deploy your own algorithms for custom detection needs.

FEATURED IN

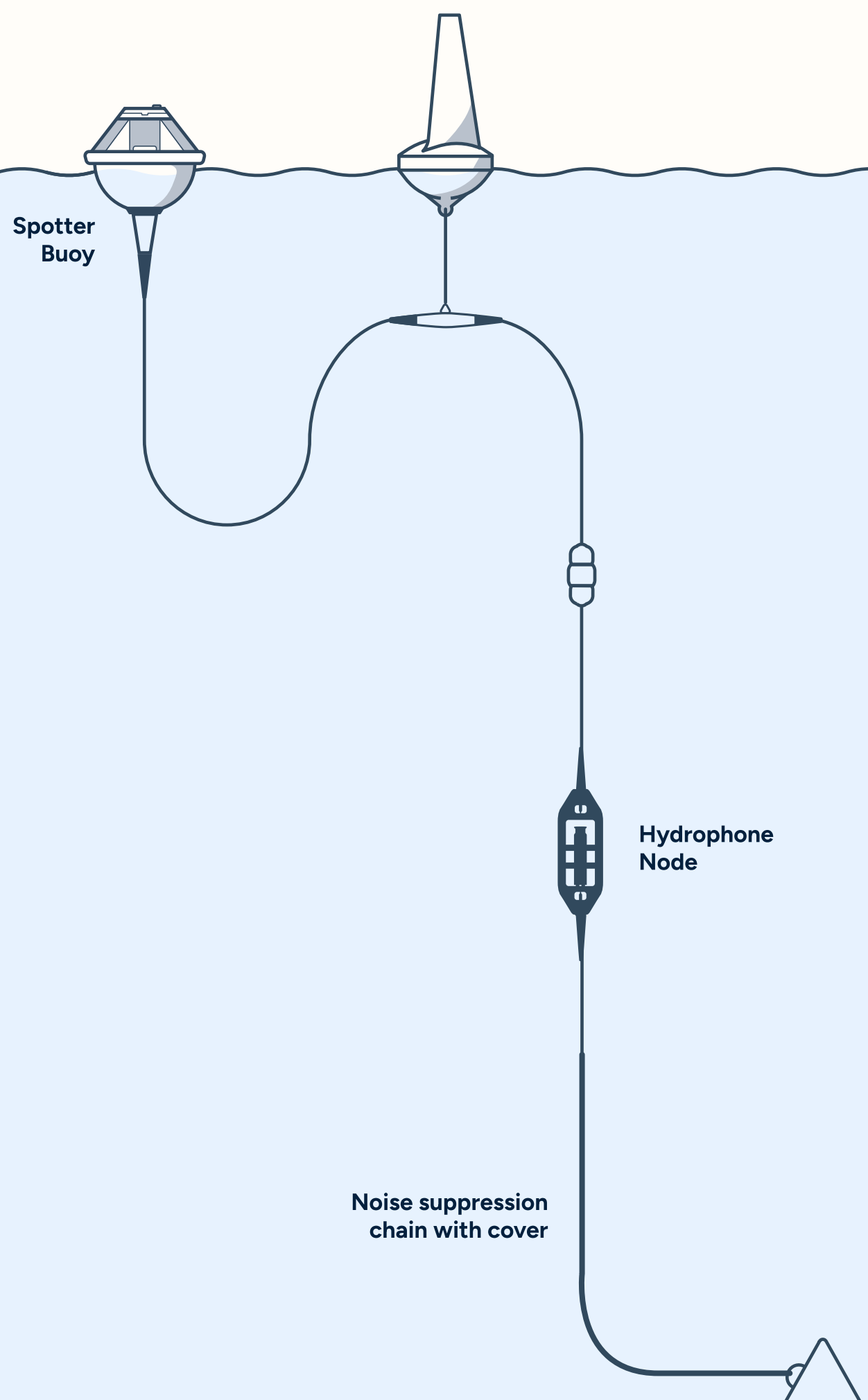
Spotter Sound

A turnkey solution for real-time underwater acoustic monitoring and AI-powered detection.

HIGH IMPACT USE CASES

- Marine Mammal Monitoring
- Unauthorized Vessel Detection
- Construction Noise Compliance

[Learn More →](#)



Core Specifications

Sensor	Applied Ocean Sciences BOREALIS
Sensor Type	Piezoelectric
Frequency Range	18 Hz - 25 kHz
Sensitivity	-203 dB re 1V/μPa
Self-Noise	<31 dB re 1 μPa²/Hz
Power Consumption	35 - 75 mW (mode dependent)
Sleep Power	<5 mW in standby mode
Sampling Rates	15k, 20.8k, 31.25k, 62.5k sps (configurable)
Directional Response	Omnidirectional
Pre-amp Gain	26.4 dB before ADC
Bit Depth	24-bit ADC (dithered to 16-bit logged)
Maximum Depth	50m
Power Supply	Spotter's Li-ion battery (solar-rechargeable)
Operating Temperature	-5°C - 35°C
Size (Dia. x Len.)	~51 mm × 254 mm
Weight	0.85 kg (< 2 lb)
Interface Standard	Bristlemouth-native (plug-and-play)

Data Collection & Outputs

- Collection Modes
- Continuous

Always-on recording with scheduled data offload
- Duty Cycling

Record intermittently to extend battery/SD usage
- Event/Trigger

Automatic detection triggers high-resolution logging

Data Outputs

- Waveform

Full acoustic waveform data for detailed analysis
- Spectral

Frequency domain data for sound characterization
- Event/Trigger

Timestamped acoustic events based on thresholds
- Sound Pressure Level (SPL)

Timestamped acoustic events based on thresholds
- Sound Exposure Level (SEL)

Cumulative sound energy measurements

Our system computes key noise metrics—such as SPL and SEL—by factoring in both the hydrophone's inherent low self-noise and any added noise from the mooring setup. This combined approach ensures that environmental acoustic signals are captured accurately, free from system interference.

Deployment & Best Practices

- Configuration Options

Ideal for moored coastal deployments with one Spotter or a network. Integrate up to two more devices (e.g. temperature/salinity) per Smart Mooring (max 3 total)
- Depth Placement

Place hydrophone ≥ 5 m below surface to avoid noise interference
- Remote Configuration & Controls

Direct control via Spotter Dashboard, binary/ASCII commands, and Sofar remote support

Data Access & Analysis

- Spotter Dashboard

View real-time data and insights
- API Access

Retrieve data programmatically with our secure API
- Onboard Storage

Download complete spectrogram via Spotter and wav files via BOREALIS SD cards for offline analysis
- Edge Processing

Host real-time event-detection models with minimal bandwidth—pre-loaded Hydrotwin™ algorithm available
- Transmission

Satellite and cellular options

